Examinations of twenty different urines from normal individuals showed the presence of tyrosin in all of them. It was also found to be constantly present in cases of cirrhosis of the liver, carcinoma of the liver, gallstones, catarrhal jaundice, Weil's disease, nephritis, cystitis, gout, bronchitis, tuberculosis, typhoid fever, glycosuria, hysteria, etc. It was, however, never found in cases of well-marked diabetes.

Since leucin and tyrosin are formed in the normal intestine as a result of the action of the pancreatic juice on proteids, Ulrich attaches much importance to its absence from the urine in cases of diabetes as indicative of disease of the pancreas.—*Nordiskt medicin. Arkiv*, 1896, No. 11. Reported in *Centralblatt für innere Medicin*, 1897, No. 12, 297.

HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF
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Disinfection by Formaldehyd.—Dr. Hans Aronson (*Zeitschrift für Hygiene*, xxv. p. 168), reviewing the various difficulties to be overcome in disinfection by formaldehyd, mentions the fact that if the strength of the formalin solution exceeds 40 per cent. a polymeride of formaldehyd, the solid paraformaldehyd, is formed and separates, and if one heats the solution further, a solid tenacious mass forms on the bottom of the vessel and finally begins to burn. To avoid this difficulty it was proposed to heat the formalin in solution with methyl alcohol (" holzin "); but this process has been found to be by no means free from disadvantages. Polymerization occurs, large amounts of wood alcohol are evaporated to no purpose, and large volumes of formaldehyd cannot be disengaged in a short time. Next, it was proposed to develop the formaldehyd directly by oxidation of wood alcohol by means of lamps constructed for the purpose. Various lamps were devised and tried, but the results in every case proved to be more or less unsatisfactory. The process proved to be expensive, the yield of active gas was not large, many lamps were needed for even small rooms, and the use of the lamps was not devoid of danger. The next step was to employ an apparatus in which a solution of formaldehyd was heated strongly under pressure of three atmospheres with the addition of calcium chloride to prevent polymerization. This, however, proved defective in several particulars, and in addition was very expensive. Aronson claims to have found a simple safe apparatus which will develop large volumes of gas in a short time from the solid paraformaldehyd in the form of pastilles. It consists of a metallic cylindrical shell beneath which is an alcohol lamp provided with several wicks. In the upper part of the shell hangs a cup for the pastilles, and in its sides are a number of slits through which the heated products of combustion of the alcohol must pass. The pastilles, which weigh one gramme each, are placed in the cup, the lamp is lighted, and the hot gases of combustion transform the solid polymeride into formaldehyd gas and mix thoroughly with it, and at the same time contribute the necessary amount of moisture to prevent polymerization. The gas is disengaged with great rapidity and diffuses evenly.

The lamp is filled with ordinary alcohol to the extent of twice as many cubic centimetres as there are pastilles in the cup. The wicks must project only slightly, so that the apparatus shall not get too hot. The manipulation of the apparatus is very simple and free from danger. It is best to place the lamp on a metal plate on the floor of the room. All openings in the room are closed, and after leaving it the alcohol is allowed to burn out.

Aronson experimented in a room of 100 cubic metres capacity, in which the test objects were placed at different levels. It made no difference whether they were placed on the floor, half-way up, or near the ceiling, which fact demonstrates the uniform diffusion of the gas, which has a specific gravity about the same as that of air.

The test objects used were staphylococcus, streptococcus, bacillus pyocyaneus, the bacilli of typhoid and diphtheria, anthrax spores, and tubercle bacilli. These were prepared in various ways on gauze, paper, linen, and woollen, in thin and thick layers and in moist and dry conditions.

In the first series of experiments two lamps were used, each with 100 pastilles; that is to say, two grammes of the disinfectant for each cubic metre of air space. The objects were distributed, the lamps lighted, the room closed and left so for twenty-four hours. On opening the room the odor was so strong that a person could stay but a very short time in the room without suffering intense irritation of the eyes and coughing. On opening the windows the smell was soon removed. All the test objects were found to be completely sterilized.

In the second series but one lamp was used with 100 pastilles. All the test objects were completely sterilized within twenty-four hours, with the exception of anthrax spores.

Aronson agrees with Vaillard and Lémoine and others that the penetrating power of the agent is not considerable. Objects wrapped in several layers of filter paper or in thin linen are disinfected, but placed in the middle of feather pillows they are not acted upon sufficiently. All surfaces should be exposed as much as possible For the higher organisms Aronson claims that formaldehyd is non-poisonous. Animals, such as rabbits, left in the rooms during disinfection are not killed, and section fails to show what one would expect, intense inflammation and irritation of the bronchi.

[The conclusions of Aronson as to the action of the agent on animal life are not in accordance with the experience of several practical disinfectors in this country.—ED.]

Cholera and Flies.—SURGEON-CAPTAIN W. J. BUCHANAN (*Indian Medical Gazette*, March, 1897) gives an account of an outbreak of cholera in Burd-